

## **REMARKS/ARGUMENTS**

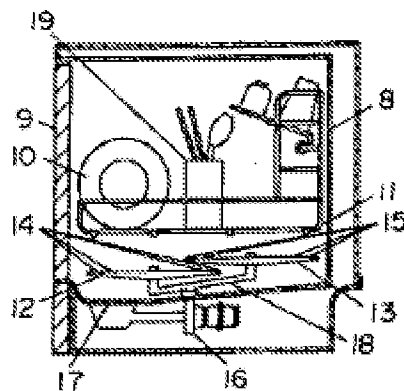
Applicants thank the Examiner for the careful consideration given the present application, and respectfully request favorable reconsideration of the application in view of the comments set forth below.

### **Discussion of Cited References**

#### **The JP ‘116 Reference**

【図1】

8 --- 洗浄槽  
12 --- 第1の洗浄ノズル(洗浄ノズル)  
13 --- 第2の洗浄ノズル(洗浄ノズル)  
16 --- 洗浄ポンプ

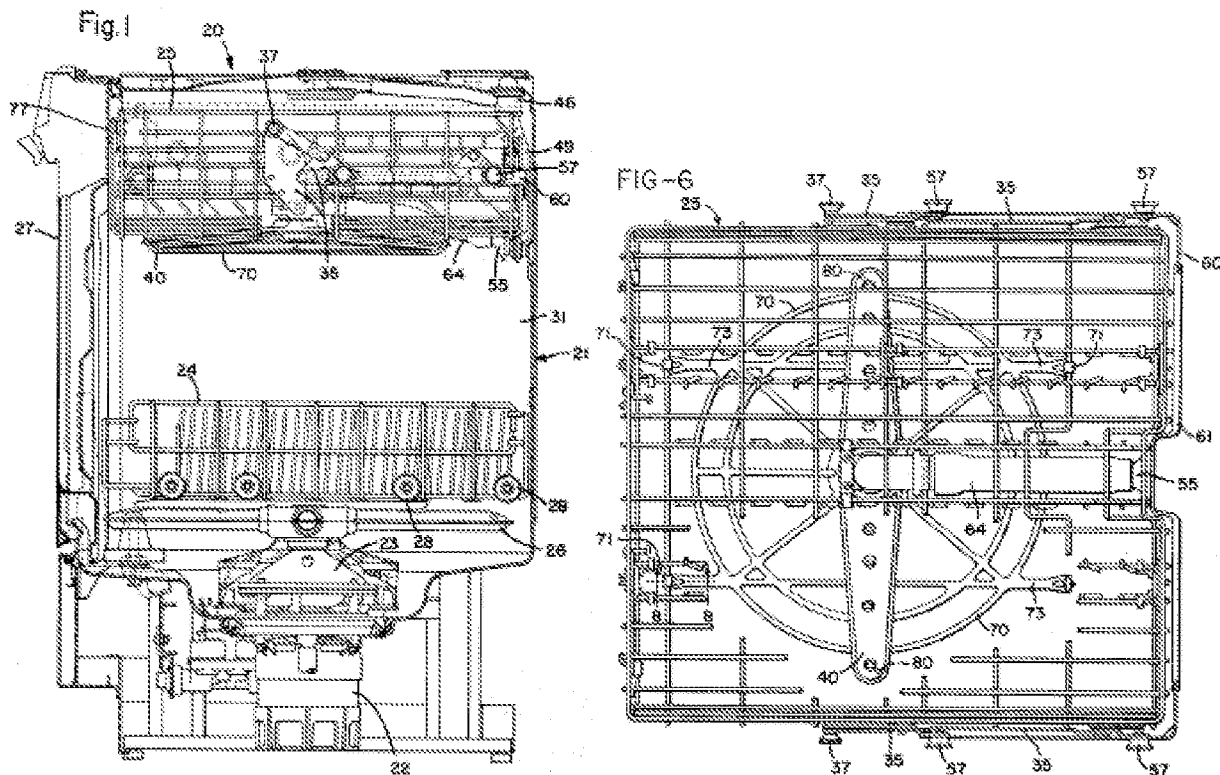


Japanese Patent Publication JP 2000-107116 (hereinafter “JP ‘116”) is the primary reference relied upon in the Office action, and, as understood, teaches an automatic dishwasher that includes a cabinet with a front door that seals a wash tub. *JP ‘116, fig. 1, item 9*. Figure 1 from JP ‘116 is reproduced above. The wash tub of the JP ‘116 reference houses two horizontally-oriented spray arms supported beneath a lowermost rack. *JP ‘116, fig. 1, items 11, 12 and 13*. The spray arms are timed 90° from each other so that one spray arm does not block the flow of water being sprayed from the other spray arm. *JP ‘116, ¶¶ [0027] and [0029]*. Unlike the claims of the present invention, neither spray arm is coaxial with a sump hopper. Additionally, since both spray arms are horizontal, the spray arm positioned above the sloped panel at the bottom of the wash tub does not have an axis of rotation at a right angle of the sloped

panel, or a plane of rotation that extends underneath the plane of rotation of the other spray arm. On the contrary, the plane of rotation of the spray arm positioned above the sloped panel at the bottom of the wash tub actually extends **above** that of the other spray arm. *JP '116, fig. 1, item 13*. Arranging the spray arm positioned above the sloped panel vertically above the other spray arm as in the *JP '116* reference fails to achieve the vertical space savings achieved by requiring the plane of rotation of the spray arm above the sloped panel to extend **underneath** that of the other spray arm.

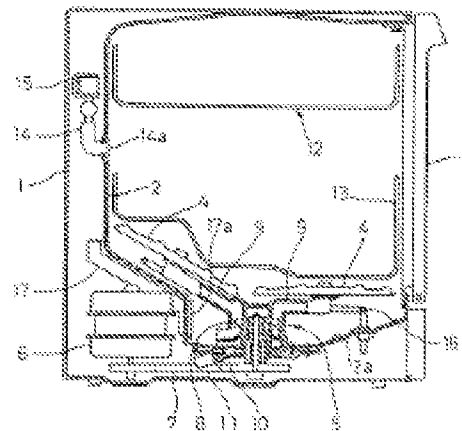
### The '887 Reference

U.S. Patent No. 4,064,887 (hereinafter "'887 patent'") discloses a spray arm that appears to extend coaxially with the sump hopper. *'887, fig. 1, items 22, 26*. FIGS. 1 and 6 of the '887 patent are reproduced below. The spray arm in the '887 patent is the only spray arm adjacent the bottom panel of the wash tub, and thus, there are no other spray arms with a plane of rotation that extends either above or below the plane of rotation of the spray arm that is coaxial with the sump hopper.



**The JP ‘150 Reference**

The newly-cited Japanese Patent Publication No. JP 63-154150 (hereinafter “JP ‘150”) discloses a dishwasher with a horizontal spray arm and an angled spray arm with its axis of rotation appearing to be at a right angle relative to a sloped panel at the bottom of a wash tub. JP ‘150, *fig. 4*. FIG. 4 from JP ‘150 is reproduced immediately below.



第 4 図

Unlike the claims of the present invention, neither spray arm is coaxial with a sump hopper, and nowhere in the JP ‘150 reference does the plane of rotation of the angled spray arm extend underneath the plane of rotation of the horizontal spray arm. On the contrary, the angled spray arm appears to extend about as low as the plane of the horizontal spray arm, and extends in an upward direction from that plane. In other words, the arrangement of spray arms in the JP ‘150 reference actually makes the vertical dimension of the dishwasher larger than if the spray arms were both simply horizontal as disclosed by the JP ‘116 reference.

**Claim Rejections – 35 U.S.C. §103(a)**

Claims 1, 2 and 7-12 stand rejected under 35 U.S.C. §103(a) as being unpatentable over the combination of JP ‘116 in view of ‘887 and JP ‘150. However, Applicants respectfully submit that claims 1 and 7-10 are not rendered obvious by this combination for at least the following reasons.

Applicants respectfully submit that the combination of JP '116, '887 and JP '150 fails to teach or suggest a dishwasher having a second spray arm that is positioned above the sloped panel and has a plane of rotation that partly extends underneath that of the first spray arm. As explained above, the JP '116 reference teaches that the spray arm positioned above the sloped panel has a plane of rotation that extends vertically *above* the plane of rotation of the other spray arm, which is the opposite arrangement as that claimed. The '887 patent has only a single spray arm disposed adjacent to the bottom of the wash tub, so it too fails to teach the second spray arm. The JP '150 reference discloses a second spray arm above a sloped panel, but also as explained above, the plane of rotation of that second spray arm does not extend underneath the plane of rotation of the other spray arm therein. Accordingly, the combination of JP '116 in view of '887 and JP '150 fails to teach or suggest a second spray arm that is positioned above the sloped panel and has a plane of rotation that partly extends underneath that of the first spray arm. Instead, the combination teaches away by disclosing the opposite spray arm configuration.

Further with respect to claims 1 and 7-10, Applicants respectfully submit that one of ordinary skill in the art would not find the claimed subject matter obvious in view of the teachings of JP '116 in view of '887 and JP '150. The rationale provided to justify the combination of the '887 patent with the teachings of the JP '116 reference is improper since there is nothing to be gained by modifying the dishwasher in the JP '116 reference as suggested in the '887 patent. The Office action explains that it would be obvious to modify the dishwasher in the JP '116 reference to position of the sump hopper coaxially with the first spray arm as taught by the '887 patent to provide support to the first spray arm. *See, Office action, pg. 3, lines 9-13.* It is also explained in this portion of the Office action that, in addition to providing support to the first spray arm, moving the sump hopper in JP '116 under the first spray arm as disclosed by the '887 patent would also allow the spray arm with enough room to rotate. *Id.* However, both of these alleged benefits to be realized by modifying the JP '116 reference according to the '887 patent are already present in the JP '116 reference. In other words, the first spray arm in the JP '116 reference is already adequately supported, and also has enough room to rotate as is. One

of ordinary skill in the art would find no motivation to modify the teachings of the JP '116 reference according to the '887 patent as proposed.

Further with regard to claims 1 and 7-10, Applicants respectfully submit that even if the second spray arm is angled as alleged in the Office action at pg. 4, lines 5-11, which Applicants do not concede is proper, the limitation requiring the second spray arm to partly extend underneath that of the first spray arm is simply not present. Angling the second spray arm in fig. 4 of the JP '116 reference to make its axis of rotation perpendicular to the sloped panel does not appear from figure 4 to extend the plane of rotation of the second spray arm partly underneath that of the other spray arm. The Office action points to the timing of the two spray arms 90° relative to each other as proof that the plane of rotations of the spray arms would intersect if the second spray arm was angled. However, the JP '116 reference explains that the two spray arms are rotated 90° from each other to avoid a “mutual interference” condition where the second spray arm blocks the flow of water being sprayed from the other spray arm, not to avoid contact. *JP '116*, ¶¶ [0027] and [0029].

In summary, the combination of references fails to disclose or suggest all the claim limitations. Namely, the cited combination of references fails to disclose or render obvious a dishwasher having two spray arms located beneath a rack and adjacent to the bottom sloped panel, with one spray arm being coaxial to the sump hopper (horizontal) and the other spray arm being at an angle to the first spray arm with an axis of rotation extending at a right angle to the sloped panel. Despite the fact that the combination of references does not teach the combination of features immediately above, the combination further does not teach such a combination of features that **also** requires the plane of rotation of the **spray arm above the sloped panel to extend underneath** the first spray arm. Such a combination of features is not found anywhere in the cited prior art and there is no reason (except unacceptable hindsight reconstruction) why one of ordinary skill in the art would modify the references to come up with such a dishwasher.

The combination of features in claims 1 and 7-10 provides the advantages of a compact spray arm design that includes an efficient spray pattern with extensive coverage and an

intensified wash zone with overlapping sprays from two spray arms that extend at an angle to each other. Such a combination as a whole is not rendered obvious by the cited references.

The remaining claims in the present application, specifically claims 2, 4-6 and 11-14, are allowable for the limitations therein and for the limitations of the claims from which they depend.

In light of the foregoing, it is respectfully submitted that the present application is in condition for allowance and notice to that effect is hereby requested. If it is determined that the application is not in condition for allowance, the Examiner is invited to initiate a telephone interview with the undersigned attorney to expedite prosecution of the present application.

If there are any fees resulting from this communication, please charge same to our Deposit Account No. 16-0820, our Order No. AEG-37595.

Respectfully submitted,  
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